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(54) **SYSTEM AND METHOD OF MONITORING AND MODIFYING HUMAN ACTIVITY-BASED BEHAVIOR**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

3,717,857	A	2/1973	Evans	340/177 R
4,112,926	A	9/1978	Schulman et al.	
4,309,509	A	1/1982	Myers	
4,353,375	A	10/1982	Colburn et al.	
5,197,489	A	3/1993	Conlan	
5,573,013	A	11/1996	Conlan	
5,749,372	A	5/1998	Allen et al.	
5,762,072	A	6/1998	Conlan et al.	
6,032,530	A	3/2000	Hock	73/379.01

OTHER PUBLICATIONS

Jerome I. Schulman et al., Instructions, Feedback, and Reinforcement in Reducing Activity Levels in the Classroom, Journal of Applied Behavior Analysis 1979, 12. 441–447, No. 3 (Fall 1979).

Jerome I. Schulman et al., The Biomotometer: A New

(List continued on next page.)

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(57) **ABSTRACT**

A system and method for monitoring the activity level of one or more individuals and modifying the behavior of those individuals based on feedback from the activity level monitoring is disclosed. When applying the system and method to hyperactive children in a classroom environment, an activity monitor is attached to each hyperactive child. The activity monitor determines the intensity of the subject's activity at the end of each epoch (approximately every 5 seconds), stores the determined intensity, and compares the determined intensity to an epoch threshold. If the determined intensity exceeds the epoch threshold, the hyperactive child is given vibrotactile feedback by the attached activity monitor. The length of time that the vibrotactile feedback is applied is proportional to the amount the determined epoch intensity exceeds the epoch threshold. When the hyperactive child presses a button on the activity monitor to thereby request session feedback, the session intensity is compared to two different session thresholds, and one of three LEDs on the activity monitor is lit up, depending on where the session intensity is in comparison to the two session thresholds. A base station, either a simple hand-held device or a more complicated desk-top device, is under the control of the teacher and has a wireless communication link with the activity monitors so that information may be downloaded and the activity monitors may be controlled.

62 Claims, 13 Drawing Sheets